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EXAMINER	
RUDE, TIMOTHY L	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/065,091
Filing Date: September 17, 2002
Appellant(s): LUO ET AL.

Belinda Lee
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 02 July 2009 appealing from the Office action mailed 11 December 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2002/0054257	**Tanada**	**5-2002**
6,144,429	**Nakai**	**11-2000**
6,122,027	**Ogawa**	**9-2000**

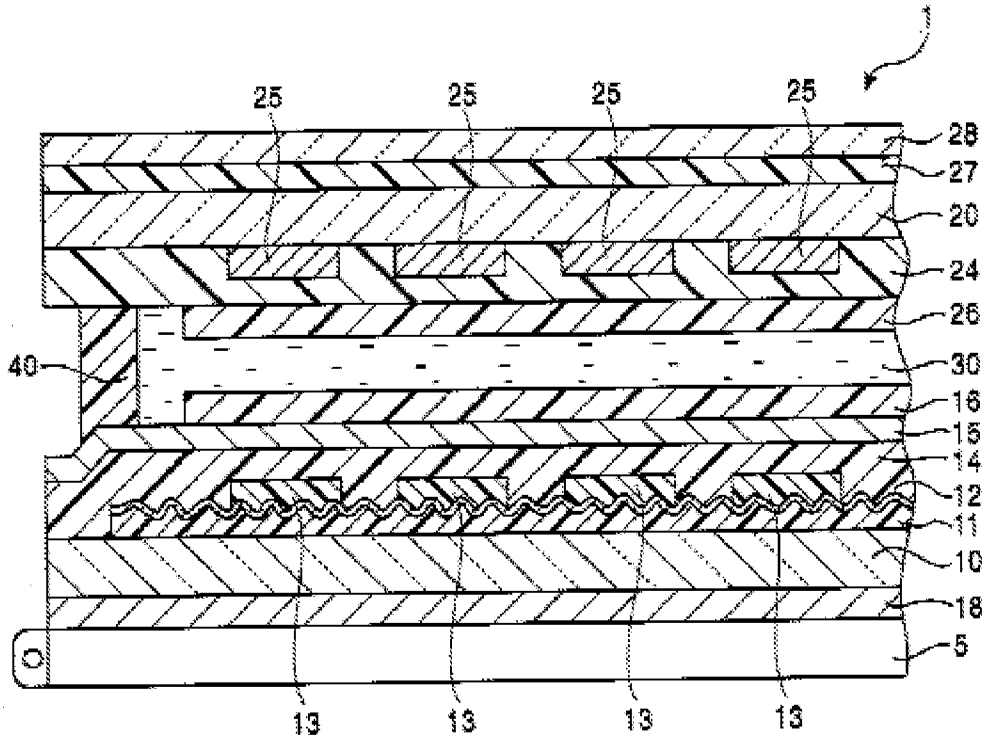
(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 56-59, and 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada et al., (Tanada), US 2002/0054257 in view of Nakai et al., (Nakai), USPAT 6,144,429.

As to claims 56-58, 62, 63, 65, and 67, Tanada discloses and shows in Fig. 1, a liquid crystal display (LCD) structure comprising a first substrate panel (10) made of glass, a second substrate panel and a liquid crystal layer (30) disposed between the first substrate panel and the second substrate panel, a plurality of pixel portions being formed by respective electrodes for applying a voltage to the liquid crystal layer, each of the pixel portions comprising:

FIG. 1



an organic insulating layer (11) such as photosensitive resin solution, such as acrylic resin (page 3, [0046]) over the first substrate panel (1), wherein the surface of the organic insulating layer has a plurality of protrude/recess structures thereon;

a conformal reflective layer (12) over the organic insulating layer (11), wherein the conformal reflective layer serves as a reflector of light;

a transparent dielectric layer (13 and 14) (color filters with their overcoat layer) over the conformal reflective layer (12), wherein the dielectric layer is a color filter layer (comprising overcoat layer) that has a substantially planar surface (smoother upper surface than the bumpy organic insulating layer); and

a first transparent conductive layer (15) conformably over the transparent dielectric layer (13 comprising 14) which is the color filter layer (comprising overcoat layer), wherein the conformal reflective layer (12) is electrically isolated from the first transparent conductive layer (15).

wherein (Fig. 1) the LCD structure further includes a second transparent conductive layer (25) over the second substrate panel (20) and the liquid crystal layer (30) between the second transparent conductive layer and the first transparent conductive layer.

Tanada does not explicitly disclose that the first conductive layer is connected to the TFT for controlling the liquid crystal layer.

Nakai discloses an LCD device (Fig. 13) having a first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer.

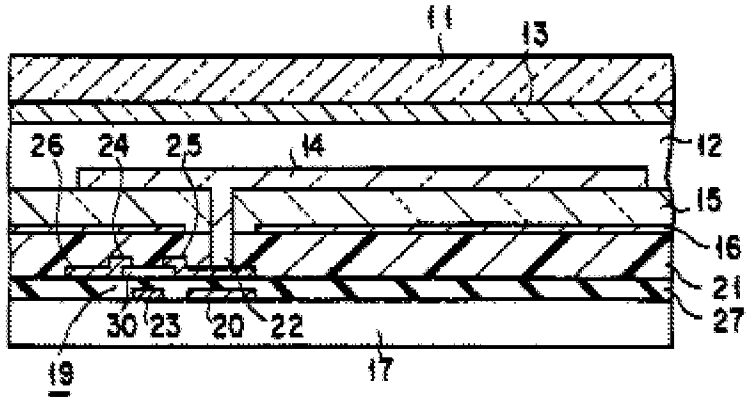


FIG. 13

Nakai is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67). Ultimately, this not only provides improved picture quality (col. 4, lines 65-66), but also provides a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tanada with the first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67) with improved picture quality (col. 4, lines 65-66), resulting in a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Regarding newly added limitations, the color filter layer comprising overcoat layer of Tanada does completely cover the conformal reflective layer.

Please note, as combined above, the resulting reflective layer covers the second terminal of the TFT, but it exposes the first terminal of the TFT to the color filter via the contact hole. Examiner considers this to read on Applicant's "… first terminal of the thin film transistor is configured in the planar color filter layer while a second terminal of the thin film transistor is configured in the organic insulating layer." (see latter part of Applicant's claim 67).

As to claim 59, Tanada discloses (page 5, [0078]) that his invention is also applicable to a three-terminal type (thin-film transistor: TFT) active matrix liquid crystal display. It is inherent for a thin film transistor to have a gate electrode, a source terminal and a drain terminal.

As to claim 64, Tanada discloses (page 3, [0053]) that the reflective layer (12) is composed of a metallic material having high reflectance, such as Al or Ag.

As to claim 66, Tanada also shows in Fig. 1 that the surface of the second substrate panel on the opposite side of the liquid crystal layer further includes a phase compensation plate (27) and a polarizer (28).

2. Claims 56-59, and 62-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanada in view of Ogawa et al (Ogawa) USPAT 6,122,027, and further in view of Nakai,

As to claims 56-58, 62, 63, 65, and 67, Tanada discloses and shows in Fig. 1, a liquid crystal display (LCD) structure comprising a first substrate panel (10) made of glass, a second substrate panel and a liquid crystal layer (30) disposed between the first substrate panel and the second substrate panel, a plurality of pixel portions being formed by respective electrodes for applying a voltage to the liquid crystal layer, each of the pixel portions comprising:

an organic insulating layer (11) such as photosensitive resin solution, such as acrylic resin (page 3, [0046]) over the first substrate panel (1), wherein the surface of the organic insulating layer has a plurality of protrude/recess structures thereon;

a conformal reflective layer (12) over the organic insulating layer (11), wherein the conformal reflective layer serves as a reflector of light;

a transparent dielectric layer (14) (insulating) over the conformal reflective layer (12), wherein the dielectric layer has a substantially planar surface (smoother upper surface than the bumpy organic insulating layer); and

a first transparent conductive layer (15) over the transparent dielectric layer (14), wherein the conformal reflective layer (12)is electrically isolated from the first transparent conductive layer (15).

wherein (Fig. 1) the transparent dielectric layer (14) includes a color filter layer (13).

wherein (Fig. 1) the LCD structure further includes a second transparent conductive layer (25) over the second substrate panel (20) and the liquid crystal layer (30) between the second transparent conductive layer and the first transparent conductive layer.

Tanada does not explicitly disclose 1) a color filter layer NOT comprising an overcoat layer, and 2) that the first conductive layer is connected to the TFT for controlling the liquid crystal layer.

Ogawa teaches 1) a display having color filters that do not comprise an overcoat layer as an art recognized color filter suitable for the purposes of producing a color display [MPEP 2144.07], wherein the color filter layer fully covers underlying layers.

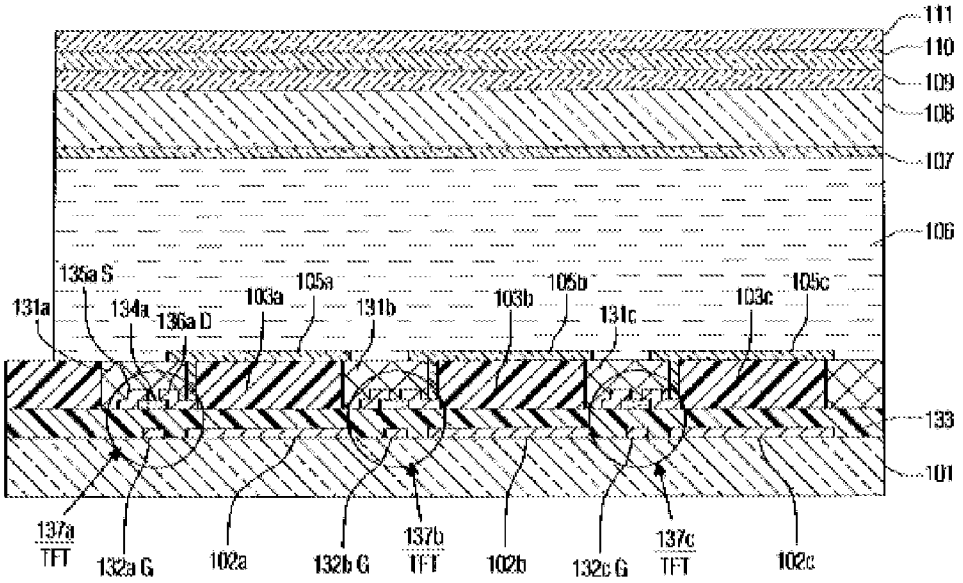


FIG. 8

Ogawa is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add color filters that do not comprise an overcoat layer as an art recognized color filter suitable for the purposes of producing a color display [MPEP 2144.07]. Please note that this proves the overcoat layer of Tanada was known to be NOT essential to such a reflective color filter display, which makes it obvious that the overcoat layer is optional.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tanada with color filters that do not comprise an overcoat layer and fully cover underlying layers as an art recognized color filter suitable for the purposes of producing a color display [MPEP 2144.07].

Nakai teaches 2) an LCD device (Fig. 13) having a first conductive layer (14) connected to the TFT (19) through the contact hole (22, goes through all intervening layers) and source electrode (25) for controlling the liquid crystal layer.

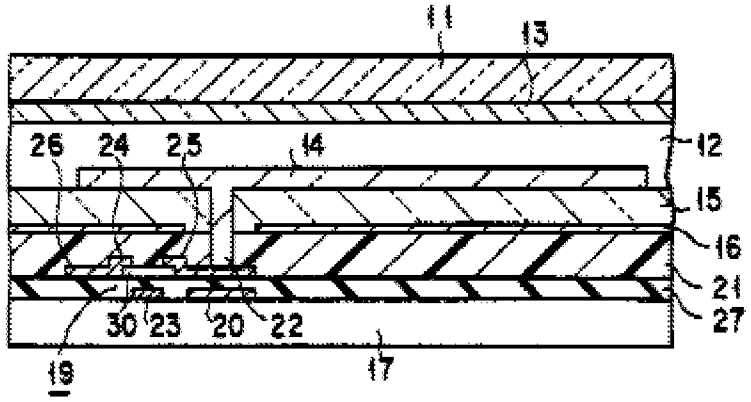


FIG. 13

Nakai is evidence that workers of ordinary skill in the art would find the reason, suggestion, or motivation to add a first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67). Ultimately, this not only provides improved picture quality (col. 4, lines 65-66), but also provides a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Tanada with the first conductive layer (14) connected to the TFT (19) through the contact hole (22) and source electrode (25) for controlling the liquid crystal layer in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67) with improved picture quality (col. 4, lines 65-66), resulting in a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

Please note, as combined above, the resulting reflective layer covers the second terminal of the TFT, but it exposes the first terminal of the TFT to the color filter via the

contact hole. Examiner considers this to read on Applicant's "... first terminal of the thin film transistor is configured in the planar color filter layer while a second terminal of the thin film transistor is configured in the organic insulating layer." (see latter part of Applicant's claim 67).

As to claim 59, Tanada discloses (page 5, [0078]) that his invention is also applicable to a three-terminal type (thin-film transistor: TFT) active matrix liquid crystal display. It is inherent for a thin film transistor to have a gate electrode, a source terminal and a drain terminal.

As to claim 64, Tanada discloses (page 3, [0053]) that the reflective layer (12) is composed of a metallic material having high reflectance, such as Al or Ag.

As to claim 66, Tanada also shows in Fig. 1 that the surface of the second substrate panel on the opposite side of the liquid crystal layer further includes a phase compensation plate (27) and a polarizer (28).

(10) Response to Argument

Appellant's Argument: At page 3, Appellant cites case law.

Examiner's Response: Respectfully, examiner has made proper rejections that do not change the principle of operation and do not entail hindsight reconstruction.

Appellant's Argument: Pages 4~5, Appellant recaps examiner's first rejection.

Examiner's Response: Respectfully, examiner rejected Appellants claims with two independent rejections under 103. The first 103 rejection, Tanada in view of Nakai (Final Rejection Para 1) relies on the fact that planar color filter layers are most often (almost always) composite layers, at least to include the three primary colors (e.g., red, green, and blue), and frequently to include clear regions, diffusive regions, black regions, and even white regions within and between sub-pixels, all well known in the art at the time the claimed invention was made. Please note, whether the prior art refers to the planar color filter layer as a planar color filter layer or whether the prior art refers to the planar color filter layer by its individual parts are merely non-patentably-distinct matters of presentation and semantics. Red, green, and blue color filters are mainly cured polymer resin as are the other clear, black, and white (if any) composite parts of the planar color filter layer; the difference lies in pigmentation or lack thereof.

The second 103 rejection, Tanada in view of Ogawa and further in view of Nakai (Final Rejection Para 2) employs Ogawa to teach a contiguous planar color filter layer without clear regions between and/or above the colored regions as an art recognized color filter suitable for the intended purpose of producing a color filter layer [MPEP

2144.07]. Ogawa is evidence that a planar color filter layer without clear regions between and above the colored regions is/was NOT novel.

Appellant's Argument: Bottom of page 5, Tanaka teaches an overcoat film, 14, covers and planarizes the color filter.

Examiner's Response: Respectfully, semantics of Tanaka not withstanding, the overcoat film, 14, fills the regions between colored regions, 13, of Tanaka to complete the composite planar color filter layer structure, forming a contiguous bottom surface that conformably and fully covers the conformal reflective layer [as claimed] and also forming a substantially planar upper surface [as claimed, see Figure 1 of Tanaka at page 4 of the Final Rejection].

Appellant's Argument: Bottom of page 6, A skilled artisan will not consider the structure of Tanaka to be a color filter layer.

Examiner's Response: Respectfully, color filter layers are most often (almost always) composite layers, at least to include the three primary colors (e.g., red, green, and blue), and frequently to include clear regions, diffusive regions, black regions, and even white regions within and between sub-pixels, all well known in the art at the time the claimed invention was made. Please note, whether the prior art refers to the planar color filter layer as a planar color filter layer or whether the prior art refers to the planar

color filter layer by its individual parts are merely non-patentably-distinct matters of presentation and semantics. Red, green, and blue color filters are mainly cured polymer resin as are the other clear, black, and white (if any) composite parts of the planar color filter layer; the difference lies in pigmentation or lack thereof.

Also, planar color filter layers are built up, e.g., first the red regions, then the green regions, then the blue regions, then the black regions, etc.. Planar color filter layers are NOT deposited as one layer in one operation - they are virtually always composite constructs that incorporate whatever light coloring, light blocking/absorbing, light scattering, and light passing regions are desired.

Appellant does not claim and does not disclose any specific color(s), so Appellant is relying upon ordinary skill in the art for enablement of the structural specifics of the planar color filter layer, e.g., red, green, blue, black, clear, etc.. Appellant does not have any negative limitations in the claim and does not have any support in the specification for any negative limitations as to what all the planar color filter layer structure may comprise.

"Color filter layer" generally (in the art) refers to everything that is on the same layer level as the discrete colored regions of (usually) red, green, and blue. Please note that the overcoat film, 14, of Tanaka fills the regions between neighboring colored regions, 13, of the planar color filter layer, thereby completing said layer and comprising said planar color filter layer.

Appellant's Argument: At page 7, planarization is not obvious.

Examiner's Response: Respectfully, all resin depositions that are not patterned tend to planarize, e.g., wax, spray paint, photo-sensitive resin deposits, etc.. One needs to somehow pattern such layers in order to create structural topography. Making an argument that colored resin deposits and clear resin (overcoat) deposits do not planarize is simply not credible. Please reference the drawings of the applied prior art; clearly they show planarization is achieved.

Appellant's Argument: At page 8, Tanada does not disclose TFTs.

Examiner's Response: Respectfully, Nakai is applied, with proper motivation to combine, to teach the use of TFTs.

Appellant's Argument: At page 9, Regarding claim 67, TFT structure relative layers is not taught by the prior art.

Examiner's Response: Respectfully, this is a new argument on the part of Appellant. Claim 67 was rejected only once, necessitated by amendment [added new claims 63~67]. However, Tanada in view of Nakai render obvious to one of ordinary skill in the art numerous configurations of layer structure with respect to TFTs, including that claimed by Appellant.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Modification of Tanada in view of Nakai would easily and obviously result in the configuration as claimed by Appellant.

Appellant's Argument: At page 9, Appellant argues performance limitations.

Examiner's Response: Respectfully, performance limitations would be met because the claimed structure is met.

Appellant's Argument: At page 11, Appellant recaps rejections.

Examiner's Response: Respectfully, rejections are sound.

Appellant's Argument: At pages 11~13, Appellant recaps issues.

Examiner's Response: Respectfully, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant's Argument: At page 14, Appellant argues planar color filter layer.

Examiner's Response: Respectfully, planar color filter layer is clearly achieved by Tanada and Ogawa, individually and as combined. Please see drawings.

Appellant's Argument: At page 15, Regarding claim 67, TFT structure relative layers is not taught by the prior art.

Examiner's Response: Respectfully, this is a new argument on the part of Appellant. Claim 67 was rejected only once, necessitated by amendment [added new claims 63~67]. However, Tanada in view of Nakai render obvious to one of ordinary skill in the art numerous configurations of layer structure with respect to TFTs, including that claimed by Appellant.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Modification of Tanada in view of Nakai would easily and obviously result in the configuration as claimed by Appellant.

Appellant's Argument: Latter part of page 15, performance cannot be achieved.

Examiner's Response: Respectfully, performance limitations would be met because the claimed structure is met.

Appellant's Argument: At page 16, Appellant argues Ogawa.

Examiner's Response: Respectfully, In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The combination of applied prior art is considered robust, with robust motivation, to render obvious a large number of LCD structures obvious to one of ordinary skill in the art, including those as broadly claimed by Appellant.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Timothy Rude

/TIMOTHY RUDE/

Primary Examiner, Art Unit 2871

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David Nelms

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Drew A. Dunn
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Supervisory Patent Examiner, Art Unit 2863